REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-14 are pending in the application.

Claims 1-14 have been rejected.

CLAIM REJECTIONS

35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1-14 under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 5,870,334 (Hemink et al.). Applicants respectfully traverse this rejection in view of the remarks that follow.

As is well established, in order to successfully assert a prima facie case of anticipation, the Examiner must provide a single prior art document that includes every element and limitation of the claim or claims being rejected.

Regarding claims 1-14, Applicants respectfully disagree with the Examiner's statement that "Figures 3A to 6 of Hemink are directed to a method for programming a memory array using programming pulses applied to either the drain or gate of one or more memory cells (col. 6, lines 30-46, fig. 2D), the method comprising: adapting the duration or the amplitude (fig. 5A) of said programming pulses as a function of the difference between a

present state of the one or more memory cells (lowest or fastest programmable cell, figs. 5B or fig. 6) and a target state of the one (typical cell, figs. 5b or fig. 6), or more memory cells, wherein the amplitude or duration of the programming are correlated to the difference between a present state of the one or more cells (col. 8, lines 1-39)".

The Hemink reference discloses programming data "... in a fast programmable cell at a relatively low voltage and in a slow programmable cell at a relatively high voltage..." (Hemink et al., abstract). According to Hemink, in the fastest programmable cell "the threshold voltage exceeds the verify potential Vverify after application of the first programming pulse..." (col. 8, lines 2-4), in the typical cell "a threshold voltage exceeds the verify potential Vverify after application of the third pulse..." (col. 8, lines 7-8), and in the slowest programmable cell "the threshold voltage exceeds the verify potential Vverify after application of the fifth pulse..." (col. 8, lines 10-11).

According to the Hemink reference "[i]f the initial value Vmin of the programming pulse... is decreased for this fastest programmable cell, and the increase rate of a programming state is constant, the programming time is prolonged due to the decrease in the initial value Vmin" (Col. 8, lines 27-32). Therefore, after every programming the threshold voltages within the same programming time are matched by adjusting the programming voltages.

Furthermore, the Hemink reference discloses applying programming pulses to the control gate of the memory cell without changing the pulses of the other terminals of the cell. For example, Hemink states that " [t]o keep them [floating gate 4 and insulating film 3] constant, the programming voltage Vprog applied to the control gate 6 is gradually increased from Vmin to Vmax with the elapse of time, as shown in Fig. 3A, to gradually increase the threshold voltage Vth...". (col. 7, lines 26-30 of Hemink et al.)

Therefore, Applicants respectfully assert that the Hemink reference does not teach or suggest all elements in claims 1-14. For example, the Hemink reference fails to teach or suggest "a method for programming a memory array... using programming pulses applied to either the drain or gate of one or more memory cells..., the method comprising adapting the duration or the amplitude of said programming pulses as a function of the difference between a present state of the one or more memory cells and a target state of the one or more memory

cells, wherein the amplitude or duration of the programming pulses are correlated to the difference between a present state of the one or more memory cells and a target state of the one or more memory cells." (claim 1 of the present invention, emphasis added). The Hemink reference therefore fails to disclose all elements of claims 1-14 and cannot anticipate claims 1-14. The Office Action has therefore failed to establish a prima facie showing of anticipation and Applicants respectfully request that this rejection be withdrawn.

In view of the foregoing remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 05-0649.

Respectfully submitted,

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Dated: July 27, 2004

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